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A Pilot Study of PTSD Symptoms Among Kalahari Bushmen

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This study reflects an attempt to assess posttraumatic stress disorder (PTSD) in a radically nonwestern culture, that of the Kalahari Bushmen, the Ju/'hoansi. After translating *DSM-IV* PTSD symptoms into their difficult and click-laden language, potential participants were nominated by village elders who were aware of domestic violence and symptoms during the preceding year. Ten men and 10 women, identified as meeting Criteria A, E, and F, were interviewed regarding their symptoms. Thirty-five percent of the sample met the criteria for PTSD for incidents occurring within the past year. All participants met the reexperiencing and arousal criteria but many otherwise distressed participants did not meet the avoidance criterion for PTSD. These results compare closely with PTSD assessments in other non-Western societies, while providing some empirical support of two new ideas about how the avoidance behaviors in such societies might be reconciled with information-processing theories of PTSD.

KEY WORDS: PTSD; information processing; diagnostic criteria; Kalahari Bushmen; Ju/'hoansi.

Whether the psychological effects of trauma are similar in all societies, specifically, whether posttraumatic stress disorder (PTSD) occurs everywhere, has been the subject of research and debate (e.g., Frey, 2001; Kleber, Figley, & Gersons, 1995; Marsella, Friedman, Gerrity, & Scurfield, 1996a; Wilson & Raphael, 1993). Chakraborty (1991), for example, contends that PTSD is a culture-bound syndrome applicable only to Euro-Americans. But after reviewing studies conducted in a considerable range of Western and non-Western societies, Marsella, Friedman, Gerrity, and Scurfield (1996b) concluded that they could not find any ethnocultural cohort in which PTSD could not be diagnosed. However, they pointed out that prevalence rates varied widely from one culture to another and it is unknown whether these rates vary due to actual ethnocultural influences or whether the assessment measures used were not sufficiently culturally sensitive to detect PTSD accurately across cultures.

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More specifically, Marsella et al. (1996b) found that, in different ethnocultural groups, reexperiencing and arousal symptoms are more easily determined than avoidance and numbing symptoms and that failure to diagnose PTSD is often because of insufficient number of Criterion C symptoms. Not only is this pattern consistent with the frequently expressed idea that PTSD involves both universal and culture-bound dimensions, but it is also consistent with the idea that these dimensions may correspond, respectively, to biological and cultural influences. Marsella et al. (1996b) suggested that the reexperiencing and arousal symptoms may have a greater biological basis that can be stimulated with drugs acting upon the central adrenergic or sertonergic systems whereas the avoidance symptoms appear to have a greater cultural influence. They went on to suggest that PTSD prevalence will be highest in cultures in which avoidance and numbing are more common methods of dealing with distress.

On the other hand, information-processing theories of PTSD (Foa, Steketee, & Rothbaum, 1989; Resick, 2001) hold that it is precisely these avoidance behaviors that result in the incomplete and inadequate cognitive processing of the incident, which maintains the reexperiencing

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and arousal symptoms. In any case, whatever the possible theoretical explanations, we find both methodologically intriguing and substantively optimistic the conclusions of reviewers such as Marsella et al. (1996b) that PTSD can be found in all societies. The non-Western ethnocultural cohorts studied thus far have mainly comprised survivors of war or natural disaster in such countries as Afghanistan, Cambodia, China, Colombia, Ecuador, Fiji, Japan, Mexico, South Africa, Sri Lanka, and Vietnam. Many of these survivors had been urban residents of cities or towns, where ethnocultural traditions are often heavily diluted; only those survivors from rural farm villages were likely to have been truly non-Westernized individuals.

The strongest challenge to the conclusion that PTSD can be diagnosed in any ethnocultural cohort would be a study of a folk society that is both nonurban and nonagricultural, that is to say, a hunter–gatherer society. In modern anthropology the archetype of hunter–gatherer band society has been those Kalahari Bushmen now called Ju/'hoansi (formerly !Kung San), a radically non-Western society still in the throes of transition from its traditional hunter–gatherer lifeways (Barnard, 1992). If sociocultural differences from Western societies truly are sufficient to affect the expression or the prevalence of PTSD, one should expect such differences to occur in the case of the Ju/'hoansi. If cross-cultural methodological difficulties complicate assessment procedures, then one should likewise expect those to be extreme in this case.

Accordingly, in June of 1999 and of 2000 we undertook a pilot study of the feasibility of assessing PTSD among the Ju/'hoansi in the Eastern Bushmanland district of Namibia. There, in some 30 villages served by the administrative town of Tsumkwe, live approximately 1500 Ju/'hoansi, with comparable numbers across the border in Botswana. In both countries, they have now settled around permanent water sources and rely on a very mixed economy (Botelle & Rohde, 1995) in which hunting and gathering remain important (G. S. McCall, 2000; Smith, Malherbe, Guenther, & Berens, 2000). Many cultural traits derived from their traditional foraging lifestyle, such as egalitarian sharing and leveling mechanisms, still dominate daily life among the Ju/'hoansi (Wiessner, 1996, 1998).

Because of the absence of wars, natural disasters, or a culture of rape, the stressor trauma examined in our pilot study was domestic violence. Even in Western societies victims of domestic violence (especially battered women) do often develop PTSD (Golding, 1999). In Ju/'hoan society, domestic violence includes but far transcends woman battering (Draper, 1999). In Ju/'hoan communities, where nearly everyone is some sort of relative and tradition calls for all members of a residential band to sleep in the open around a single common campfire, virtually every incident of interpersonal violence amounts to an incident of domestic violence.

Popular books and movies depict the Ju/'hoansi as "harmless people" (Marshall, 1961, 1976; Thomas, 1959), terrified by the very prospect of violent interpersonal conflict and instead relying on talk, sharing, and gift-giving to more constructively handle social tensions. Indeed, it is this cultural dread—based on the universal availability of arrow poison for which there exists no antidote, and on their having lived in small leaderless bands remote from medical assistance and from any police authority which might intervene—which lends to Ju/'hoansi domestic violence the distinctive and strong fear that such incidents could well end in death.

Popularly overlooked, however, have been the contrary findings of Lee (1979) and others, which concede the Ju/'hoan extreme cultural dread of violent conflict while carefully documenting among the Ju/'hoansi amazingly high rates of argument, fighting, and armed violence. This apparent contradiction is largely explained by the widespread practice of binge drinking among contemporary Ju/'hoansi (G. J. McCall, 2000). In the Ju/'hoan culture, aggression and violence after drinking are attributable, not to the individual, but to the state of drunkenness; "the fault is in the beer" (Katz, Biesele, & St. Denis, 1997).

The Ju/'hoansi seemed to us, then, an ideal society in which to explore the occurrence of PTSD: extremely non-Western in social structure and cultural traditions, with a distinctive shared terror of interpersonal violence that renders serious domestic violence almost universally a Criterion A event, yet with high rates of domestic violence assuring that victims could readily be located. Our pilot study was guided by the following two hypotheses: (1) Among Ju/'hoansi victims of domestic violence, PTSD is observed; and (2) Among Ju/'hoansi victims of domestic violence, PTSD Criteria B and D are more frequently satisfied than is Criterion C.

To conduct this study, two phases of research were needed. First, a feasibility study was conducted in order to determine whether PTSD symptoms could be assessed in this population. Once the feasibility was established and the instrument was developed, the pilot data collection was conducted.

Method

Feasibility Study

In this study we sought to ask Ju/'hoansi victims of domestic violence about each of the *DSM-IV* criteria for PTSD (American Psychiatric Association, 1994). This required linguistic translation of the published phrasings

from English into the exotic, click-laden, and little studied Ju/'hoan language (Dickens, 1994). In this task McCall worked intensively with a native translator with whom he had previously worked successfully. A few of the *DSM-IV* concepts (e.g., psychic numbing) proved quite difficult to express in the Ju/'hoan language. However, through iterated give-and-take between translator and investigator over nuances of particular words in both languages as well as the appropriateness of the *DSM-IV*-suggested examples, Ju/'hoan translations were eventually formulated for each of the symptoms and criteria. Back translations from Ju/'hoan to English by another (less) experienced bilingual individual to the investigator were limited, confined mainly to these few difficult items. Whether these procedures were adequate to fully meet the methodological criterion of equivalence of meaning (Keane, Kaloupek, & Weathers, 1996) cannot be answered unequivocally, of course, but we were sufficiently confident to proceed.

A second concern was that, in McCall's previous experience and that of other researchers, Ju/'hoansi are reluctant to answer any series of difficult questions (because to do so in this highly egalitarian community makes them seem to be setting themselves off as immodestly expert), especially when those questions are directly posed by a Westerner. Accordingly, McCall had the native translator (an experienced interviewer) conduct all interviews outside his presence.

The feasibility study was conducted through informant interviewing (McCall & Simmons, 1969), in which knowledgeable individuals are asked to speak about events occurring to others (not for those other individuals). The native interviewer identified in each of three Tsumkwe residential districts a mature adult female reputed to be knowledgeable about local events and participant reactions. Although privacy is a weak institution in these communities, each of the three informants was interviewed alone in the most sheltered spot within her household yard. Each was asked to list Ju/'hoansi living in that residential district who had been stabbed or seriously beaten by a relative within the previous year. Then, for each *DSM-IV* symptom, each informant was asked whether, in her experience, any one of these victims had exhibited that symptom for at least one month following the attack. The results of this informant interviewing suggested that most of the symptoms did occur and endure fairly commonly among these victims.

Pilot Study

Participants

From the lists of victims generated in the preliminary round of data collection as meeting Criteria A, E, and F, a quota sample of 10 female and 10 male victims of domestic violence, roughly proportional across all three residential districts, was selected jointly by investigator and interviewer on grounds of seriousness of the assault. Twenty seemed to us the minimum acceptable sample size for a pilot study, particularly in a community of only some 150 adults. Though all 20 victims selected for interview were known to the interviewer, none had any prior relationship or subsequent direct contact with the investigator.

Among the victims selected, 65% of the index assaults had involved some sort of weapon (male victims, 50%; female victims, 80%). Most of these armed assaults were stabbings with knives or spears (30% of all male victims, 60% of all female victims) but a few were beatings with blunt objects such as stones or walking sticks (20% of all male victims and 20% of all female victims). Whether or not the attack had involved a weapon, every one of the victims selected had sustained physical injury through the index assault.

Instrument

Each PTSD symptom was assessed in a simple yes/no format rather than employing the more differentiating Likert-type response scales of symptom severity or frequency (De Girolamo & McFarlane, 1996), and responses were recorded by item number as either "Y" or "N" in the interviewer's simple notebook, often with a brief specification of how that symptom was mainly manifested in the victim's life. The wording of the items was as close as possible to the language of the *DSM-IV* statements, and in each case the reference of an item was the previously identified index incident of beating or stabbing. Because of the previously mentioned Ju/'hoan reluctance to answer questions, the interview contained no items regarding trauma history or preassault functioning.

Procedure

The central round of data collection involved respondent interviewing of victims themselves (McCall & Simmons, 1969), in which they reported directly on their own victimization and symptoms. The victims selected were approached, in person, by the native interviewer to explain the nature of data collection and to offer a very modest reimbursement for the time it would require. All 20 consented and were then interviewed in semiprivate locations selected by the respondents. To conduct 20 interviews of this type required two June seasons. Following the completion of each interview, the interviewer was promptly and thoroughly debriefed by the investigator; the latter's judgment that any information was incomplete or puzzling led to a follow-up by the interviewer.

Results

As expected, PTSD was indeed observed among Ju/'hoansi victims of domestic violence. Of the 20 victims interviewed, 35% met the criteria for PTSD. Because Criteria A, E, and F were unproblematic (respondents having been selected on the basis of meeting those three criteria), this result really means that 35% met the symptom criteria B, C, and D.

There were no significant gender differences on either the PTSD diagnosis (males, 30%; females, 40%) or the number of symptoms in each symptom cluster. (This finding is not particularly surprising, because both male and female victims had been selected for having sustained bodily injury and for having feared loss of someone's life during the index episode.) Both the reexperiencing and avoidance clusters were normally distributed, but no one reported fewer than two different types of arousal symptoms.

No victim reported fewer than 4 symptoms and one reported as many as 13 symptoms, with a mean of 7.9 and a median of 7.0. Yet despite such high numbers of PTSD symptoms (6 symptoms with proper distribution being needed for diagnosis), 13 of the 20 victims failed to meet all the criteria for a diagnosis of PTSD. This failure to meet diagnostic criteria is not simply a matter of numbers of symptoms, for those individuals who failed to meet the criteria displayed a mean of 6.5 symptoms each.

The fact is, as expected in Hypothesis 2, Criteria B and D were satisfied considerably more often than Criterion C. With regard to Criterion B, the intrusive recollection criterion, all 20 victims met the requirement of displaying one or more B symptoms. With regard to Criterion D, the hyperarousal criterion, again all 20 victims met the requirement of displaying two or more D symptoms. In sharp contrast, Criterion C, the avoidance/numbing criterion, proved highly problematic among these Ju'/hoansi victims. Few reported enough symptoms (i.e., three or more) to meet this criterion, and the sole reason that any victim failed to be diagnosed with PTSD was showing too few C symptoms. However, 85% of the sample reported at least one type of avoidance. Summarizing the data by symptom rather than person (see Table 1), we found that, with a single exception (trying not to think about, talk about, or have feelings about the beating/stabbing), C symptoms occurred with either low (35–40%) or extremely low (5%) frequencies among these highly distressed victims.

Discussion

The findings of this pilot study were that among the Kalahari assault victims, intrusive and arousal symptoms were universal, but only 35% of the sample met full criteria for PTSD because of the avoidance items that are typically assessed. The finding that avoidance symptoms, as assessed currently, are less likely to be reported than intrusion or arousal is consistent with findings of other non-Western cultures that have been studied (Marsella et al., 1996b). We do not discount the possibility that the results just presented could be, at least in part, methodological artifacts. Our use of a simplified response-scale with translated items, administered by a Ju/'hoan native who was not

Table 1. Percent of Respondents Reporting Each of the Individual Symptoms of Posttraumatic Stress Disorder

Criterion B: Intrusive Recollection	
B-1) Having upsetting thoughts or images about the beating/stabbing that came into their head when they didn't want them to?	50%
B-2) Having bad dreams or nightmares about the beating/stabbing?	25%
B-3) "Reliving" the beating/stabbing, i.e., acting or feeling like it was happening again?	45%
B-4) When somehow reminded of the beating/stabbing, feeling scared, angry, sad, guilty, emotionally upset?	95%
B-5) When somehow reminded of the beating/stabbing, experiencing bodily reactions like breaking into a sweat or the heart beating faster?	65%
Criterion C: Avoidance/Numbing	
C-1) Actually trying not to think about, talk about, or have feelings about the beating/stabbing?	75%
C-2) Trying to avoid activities, people, or places that remind them of the beating/stabbing?	35%
C-3) Not being able to remember an important part of the beating/stabbing?	5%
C-4) Having much less interest or participating much less often in important activities?	5%
C-5) Feeling distant or cut off from people around them?	40%
C-6) Feeling emotionally "numb," e.g., being unable to cry or unable to have loving feelings?	5%
C-7) Feeling as if their future plans or hopes will not come true (e.g., like they will not have a marriage, children, or a long life)?	40%
Criterion D: Hyperarousal	
D-1) Having trouble falling asleep or staying asleep?	15%
D-2) Feeling irritable or having fits of anger?	95%
D-3) Having trouble concentrating (on a task or a conversation)?	40%
D-4) Being too alert (e.g., checking to see who's around them, or being uncomfortable with their back to the door)?	100%
D-5) Being jumpy or easily startled (e.g., when someone walks up behind them)?	55%

a trained clinician (though comparatively well educated and certainly an experienced interpreter/interviewer), without the direct presence of an investigator, might have affected the scores obtained. However, whether these factors might have served to inflate or to deflate individual scores, or merely to increase variability, is not clear-cut.

Despite the small sample size and difficult conditions, these data are adequate to sustain the hypothesis that PTSD could be found in this exotic population. Many individual symptoms of PTSD are fairly objective matters and presented no major difficulties to our translation efforts and appeared to have evoked no particular respondent hesitation or confusion. Only certain items, having to do with obscure symptoms like psychic numbing, proved difficult. Diagnosis of PTSD is, of course, a more complex matter. While false-negative responses on Criterion C items might indeed prove more likely without sensitive probing by a trained clinician, would not that same literalness of administration also produce (though perhaps at a lower rate) false-negative responses on items tapping the other two symptom clusters? For us to accept that our conclusion about the occurrence of full-blown PTSD in this sample might have been mistaken would require convincing argument that our procedure systematically evoked false-positive responses on items pertaining to Criteria B and D at the same time that it systematically evoked false-negative responses on items pertaining to Criterion C symptoms.

Supposing, then, that our findings may not be mainly artifactual, let us consider what the wider implications of those findings might include. First of all, our finding that all Ju/'hoansi participants showed enough reexperiencing and arousal symptoms for a diagnosis but that many denied avoidance symptoms sufficient to meet the current threshold for diagnosis, resonates with the ongoing debate about proper criteria for diagnosis. Our study is only the latest of numerous ethnocultural investigations to suggest that avoidance/numbing symptoms are substantially more culturally influenced than are the (perhaps "hard-wired") reexperiencing and arousal symptoms, so that PTSD prevalence will be higher in those cultures where the particular forms of avoidance as assessed in Criterion C of the *DSM* are more common methods of dealing with distress. In Ju/'hoansi culture, numbing is so uncommon that members found it difficult even to conceptualize, whereas certain tactics of avoidance, such as temporarily taking up existing rights to reside among different kin in another village, are culturally endorsed. Perhaps as a consequence of this split, the PTSD rate of 35% we found among Ju/'hoansi victims falls on the low side of the American range of 33–84% of battered women (Golding, 1999).

Symptoms of avoidance and numbing are accorded a central role in the increasingly influential information-processing theories of PTSD (Foa et al., 1989; Resick, 2001), which hold that it is precisely those avoidance behaviors that result in the incomplete cognitive processing of the incident, in turn responsible for maintaining the reexperiencing and arousal symptoms. Our Ju/'hoansi results, like those of other non-Western samples, demonstrate the difficulty of assessing the negative symptoms of PTSD, the avoidance symptoms, without attention to the cultural context. One possibility is that, in non-Western societies, perhaps even one type of avoidance behavior may be enough to impede cognitive processing to sufficient extent to produce full-blown reexperiencing and arousal symptoms. For example, the C-1 symptom (actively trying not to think, talk, or have feelings about the incident) would seem, on theoretical grounds, just the sort of behavior that might serve to impede cognitive processing of the incident and was reported by 75% of this sample.

A second possibility is that the culture of non-Western societies per se serves to prevent cognitive processing of traumatic incidents on the part of individual members. Thus, "cultures of avoidance," rather than individual adaptations, could account for disruption of cognitive processing. The Ju/'hoansi culture can be reasonably construed as such a "culture of avoidance." First of all, village-wide binge drinking is nearly universal and quite frequent, a type of substance abuse that well might interfere with cognitive processing of trauma (Marshall & Ritchie, 1984; Wiessner, 1998). Second, departures from individual or community health generally trigger traditional healing "trance dances"; although only one or two healers actually enter a trance state, participation in these hypnotically repetitive dances is community-wide and fairly frequent (Katz, 1984). Third, blaming the perpetrator (for any length of time) is culturally disapproved, for it is axiomatic among the Ju/'hoansi that for violent acts "the fault is in the beer" (Katz et al., 1997) and therefore any open breach of relationship with the perpetrator is considered most inappropriate. Within days of an event, there is a community prohibition against further discussion of the event. Taken together, these three features of Ju/'hoansi culture certainly seem likely to disrupt ordinary cognitive processing of a traumatic incident, and the Ju/'hoansi "culture of avoidance" perhaps serves as a functional proxy for those individual symptoms of avoidance typically encountered among Western victims of traumatic stress.

The significance of this pilot study resides primarily in the extremity of its cross-cultural comparison, attempting for the first time to investigate PTSD within a radically

non-Western folk society, one still in the throes of transition from its traditional hunter–gatherer lifeways. This paper shows how technically challenging such an investigation can be, and considers the numerous methodological limitations of PTSD research in cultural settings like those of Ju/'hoansi society. More importantly, this pilot study does indicate that even in an extreme non-Western society, assessment is feasible, given culturally appropriate modifications. Our pilot-study results compare closely in at least two respects with PTSD assessments in other non-Western societies, while providing some empirical support of two new ideas about how the restrictive range of avoidance/numbing symptoms in such societies might be reconciled with information-processing theories of PTSD.

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